

ture media. This experiment is the natural correlative of those which have shown that many ova may be stimulated artificially to produce embryos. In these studies the sperm cells of the chicken were used and were cultivated in egg yolk, egg albumen, chicken blood serum, and Ringer solutions.

It was found that spermatozoa did undergo some transformations. These include the shortening of the head, the formation of a vesicle about the head and middle piece, the dispersal thru the vesicle of the matter of the head, the gradual reformation of the chromatin into objects suggestive of chromosomes.

On the whole, while no evidence has been found that division can take place in the sperm outside the egg, the results thus far may be comprhended in the statement that the sperm is able to organize itself into something much resembling a nucleus.

ADAPTATION OF FISH TO TEMPERATURE

Loeb and Wasteney (Jour. Exp. Zool., May, 1912), inquire into the phenomena associated with adaptation to changed temperatures. It has long been known that animals may gradually be rendered immune to temperatures which applied outright would cause death.

In these experiments it was found that fish could be rendered immune to the hurtful effects of a sudden transfer to water of a temperature of 35°C by being placed for 30 hours or more in a temperature of 27° . Similarly they may be made immune to a temperature of 39°C . The ability to endure water at 35° was not lost or weakened by keeping the fish at a temperature of $10^{\circ}\text{--}14^{\circ}$ for 33 days after having been acclimatized to water at 27° ; nor by keeping them for two days at a temperature of 0°.4C , after their two days exposure to 27° .

It was also found that fish could stand a sudden increase of temperature better with a higher concentration of sea-water up to a certain maximum solution—beyond which the ability again declined. This is thought to be due to specific effects of the salts rather than to changed osmotic conditions.

EFFECT OF CONTACT AND TENSION ON TENDRILS

Brush (Bot. Gaz. June, 1912), finds that the tendrils of Passi-

flora which are actually functioning in supporting the plant are possessed of greater breaking strength, all along their length, than tendrils of similar age that are not functioning. According to the conclusions of the author there are two different factors, contact and tension, which combine to produce the increased strength. The effect of contact of the tendril with supporting objects is to increase the numbers, and the thickness of the walls, of the cells of the xylem; while the effect of tension is to produce a thickening of the walls of the pith by which it comes to function as a real mechanical tissue. It has never been considered that pith achieved any mechanical value.

TO MOUNT DISSECTIONS OF MOUTH-PARTS OF INSECTS, UNDER ONE COVER-GLASS, WITHOUT CEMENT*

1. Dissect out the various parts; place them on a slide; put another slide on top; tie with cotton, and put into methylated spirit for 24-48 hours, according to size of specimens.

2. Remove one of the slides, carefully detach the parts, and place them in clove oil (or terpineol: V. A. L.) to clear. Then cover with turpentine.

3. Place the mouthparts on a slide in the desired order, cover all with a cover glass which must be held securely on with wire clip. Allow thin Canada balsam in benzole to run under cover. As the benzole evaporates add more of the thin balsam, until the space is filled.

4. Allow preparation to dry a week or more. Remove clip, wash away excess balsam with camel's hair brush in benzole. When completely dry apply coat of shellac varnish, if desired, to edge of cover glass.

TERPINEOL: A NEW CLEARING AGENT

This agent can be used for all microscopical purposes including celloidinized sections. The oils are chemically known as terpenes, terpene alcohols, sesquiterpenes, and a few others with their esters, such as terpinyl acetate. All these substances are found in varying amounts in one and the same oil.

*Personal communication from Martin J. Cole, London, to Dr. V. A. Latham.